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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,301	01/02/2004	David M. Giorgi	00970.0011-US-U1	8801
22865	7590	05/18/2007		
ALTERA LAW GROUP, LLC 6500 CITY WEST PARKWAY SUITE 100 MINNEAPOLIS, MN 55344-7704			EXAMINER VAN ROY, TOD THOMAS	
			ART UNIT 2828	PAPER NUMBER
			MAIL DATE 05/18/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/751,301

Applicant(s)

GIORGI ET AL.

Examiner

Tod T. Van Roy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 and 17-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, 5, 7 and 9-12, 14, 15, 17, 19 is/are rejected.
- 7) ☒ Claim(s) 3, 6, 8, 13, 18 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 7 is objected to because of the following informalities:

Claim 7 makes reference to two switches being present, and should depend from claim 5 rather than claim 2.

Appropriate correction is required.

Response to Arguments

Applicant's arguments, see Remarks, filed 02/13/2007, with respect to claims 1-13 have been fully considered and are persuasive. The rejection of the claims has been withdrawn.

The examiner agrees with the applicant that neither the Molitor nor the Clark references teach the claimed subject matter as currently amended.

Applicant's arguments filed 02/13/2007 have been fully considered but they are not persuasive.

The applicant has argued that Duke does not properly disclose the limitations found in regards to claims 14-15, 17, and 19. The Examiner does not agree.

With respect to claims 14, and 19, the Applicant has argued that Duke does not disclose two differing voltage magnitudes "established" in capacitors C1/C2, as only one voltage source is disclosed. The Examiner agrees that only one voltage source provides

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an input to each of C1/C2, however, this driving source is in parallel to each capacitor branch (fig.1). As each branch is in parallel, the voltage drop across the *entirety* of each branch must be equal (voltage constant in parallel). The two branches differ in the components contained in each, namely, the C1 branch contains only C1, while the C2 branch contains a resistor R2. As an amount of voltage would inherently be dropped across R2, the entire voltage value would not be found at C2. Therefor, at least at the initial application of charge to the circuit, a disproportionate amount of voltage would be dropped across C1 relative to C2 due to the presence of R2, "establishing" two differing voltage magnitudes in each circuit element.

With respect to claims 15, and 17, the Examiner notes US 6016325 that teaches the use of individual charge sources being used to apply voltages to multiple individual capacitive elements in order to assert control on an individual basis.

The Examiner notes that the amendments to claim 1 regarding the use of the term "chargeable" effectively broaden the claim with respect to an applied voltage magnitude. This claim is not limited to two differing voltages magnitudes to be present, but rather that each capacitor must have the 'physical ability' to be charged to a non-descript voltage level. As such, new rejections to the claims are made, and the indicated allowable subject matter previously found in claims 2, 4 and 5 is hereby withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-5, 7, and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Hannan et al. (US 3371232)

With respect to claims 1 and 9-12, Hannan discloses a pulsed laser diode driver (title) comprising: a slow voltage discharge stage comprising a first energy storage element (fig.2 #34, capacitor) chargeable to a first voltage magnitude (inherent) and having a first energy storage capacity, a fast voltage discharge stage comprising a second energy storage element (fig.2 #40) chargeable to a second voltage magnitude (inherent) and having a second energy storage capacity being less than the first energy storage capacity (col.4 lines 11-15), and the second voltage magnitude being greater than the first voltage magnitude (as they can be any values, the 1st could be 1v while the 2nd could be 2v), a switch controlled circuit path (fig.2 #45, switch), and a laser diode (fig.2 #30) controllably coupled through the switch controlled circuit path to the first energy storage element for receiving a discharge of energy therefrom, and to the second energy storage element for receiving a discharge of energy therefrom (col.3 lines 44-52, switch closes, #34 discharges into #40 and both then discharge through #30).

With respect to claim 2, Hannan discloses the driver of claim 1 further comprising a first charge source (fig.2 #49) for establishing the first voltage magnitude, and a second charge source (fig.2 #34, as it charges #40) for establishing the second voltage magnitude, wherein, the first and second capacitors are coupled to the respective sources, and the switch has a first terminal coupled to a first terminal of the laser diode and a second terminal coupled to a first terminal of the first capacitor and to a first terminal of the second capacitor, and a second terminal of the laser diode is coupled to a second terminal of the first capacitor and to a second terminal of the second capacitor (the examiner notes the use of the "coupling" term and its broad meaning, see the previous office action).

With respect to claim 4, neither terminal of the switch is grounded.

With respect to claim 5, Hannan discloses that outlined in the rejection to claim 2, and further discloses the use of a second switch (fig.2 #48).

With respect to claim 7, no terminals of the switches are grounded.

Claim 1-2, 4, and 9-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Takahashi et al. (US 4928248).

With respect to claims 1 and 9-12, Takahashi discloses a laser diode driver (title) comprising: a slow voltage discharge stage comprising a first energy storage element (fig.1 #10, capacitor) chargeable to a first voltage magnitude (inherent) and having a first energy storage capacity, a fast voltage discharge stage comprising a second

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energy storage element (fig.1 #13) chargeable to a second voltage magnitude (inherent) and having a second energy storage capacity being less than the first energy storage capacity (as #13 is variable and #10 is fixed one must have a capacity less than the other during a given configuration, and therefor it is only a matter of labeling which is the first and second in order to meet the limitation), and the second voltage magnitude being greater than the first voltage magnitude (as they can be any values, the 1st could be 1v while the 2nd could be 2v), a switch controlled circuit path (fig.1 #8, switch), and a laser diode (fig.1 #4) controllably coupled through the switch controlled circuit path to the first energy storage element for receiving a discharge of energy therefrom, and to the second energy storage element for receiving a discharge of energy therefrom (col.3 lines 59-col.5 line 36, switch closes, #10 discharges into #11 creating V_j and charging #13 and the energy from both then discharge through #4).

With respect to claim 2, Takahashi discloses the driver of claim 1 further comprising a first charge source (fig.1 #6) for establishing the first voltage magnitude, and a second charge source (fig.1 #10, as it charges #13) for establishing the second voltage magnitude, wherein, the first and second capacitors are coupled to the respective sources, and the switch has a first terminal coupled to a first terminal of the laser diode and a second terminal coupled to a first terminal of the first capacitor and to a first terminal of the second capacitor, and a second terminal of the laser diode is coupled to a second terminal of the first capacitor and to a second terminal of the second capacitor (the examiner notes the use of the "coupling" term and its broad meaning, see the previous office action).

With respect to claim 4, neither terminal of the switch is grounded.

Claims 14 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Duke et al. (US 3577017).

With respect to claims 14 and 19, Duke discloses a method for driving a laser diode with a current pulse comprising: establishing a first voltage magnitude in a first energy storage element having a first energy storage capacity (fig.1 #C2 0.0015 uF), establishing a second voltage magnitude in a second energy storage element having a second energy storage capacity (fig.1 #C1 0.0002 uF), the second energy storage capacity being smaller than the first energy storage capacity ($C1 < C2$), and the second voltage magnitude being greater than the first voltage magnitude (voltage across C1 would be greater than across C2 due to the voltage drop across series resistor R2), and discharging the first energy storage element and the second energy storage element into a laser diode (fig.1 #10), the discharge of the first energy storage element essentially furnishing a flattop current pulse to the laser diode, and the discharge of the second energy storage element essentially establishing a risetime characteristic of the current pulse (fig.6 inverted pulse to the device, col.1 lines 17-20, as the prior art teaches the claimed circuit schematic in the same configuration the output from the elements would also function in the same manner to drive the diode).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duke.

With respect to claim 15, Duke teaches the driving circuit outlined in the rejection to claim 14 above, including the charge storage devices to be capacitors, but does not teach the use of two separate charge sources. It would have been obvious to one of ordinary skill in the art at the time of the invention to use multiple charge sources, instead of the single source of Duke, in order to allow for a higher degree of control over the amount of voltage applied to each part of the driving circuit.

With respect to claim 17, Duke further teaches the current pulse comprises overshoot in the beginning (fig.6 inverted pulse) attributable to the discharge of the second capacitor (as the prior art teaches the claimed circuit schematic in the same

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configuration the output from the elements would also function in the same manner to drive the diode).

Allowable Subject Matter

Claims 3, 6, 8, 13, 18 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 3, 6, and 8 are believed allowable as the prior art was not found to teach the given ground configurations described with respect to the switching elements.

Please see the previous office action for reasons given for the allowance of claims 13, 18 and 20.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tod T. Van Roy whose telephone number is (571)272-8447. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Minsun Harvey can be reached on (571)272-1835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TVR


**MINSUN OH HARVEY
PRIMARY EXAMINER**